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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,728	03/01/2000	Thomas O Daniel	1242/12/2	2723

25297 7590 05/23/2005

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EXAMINER	
YAEN, CHRISTOPHER H	

ART UNIT	PAPER NUMBER
1642	

DATE MAILED: 05/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/516,728	DANIEL ET AL.	
	Examiner	Art Unit	
	Christopher H. Yaen	1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-61 and 63-92* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56-60 and 63-92* is/are rejected.

7)☒ Claim(s) *61* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 12/10/04
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

S.O.O.

DETAILED ACTION

Re: Daniel *et al*

1. The amendment filed 2/7/2005 is acknowledged and entered into the record. Accordingly, claims 1-55, and 62 are canceled without prejudice or disclaimer.

2. Claims 56-61 and 63-92 are pending and examined on the merits.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Information Disclosure Statement

4. The Information Disclosure Statements filed 12/10/04 and 3/8/2005 are acknowledged and considered. The IDS filed 3/8/2005 is a duplicate of the IDS filed 12/10/04. A signed copy of the IDS filed 12/10/2004 is attached hereto.

Priority

5. The instant application claims priority to CIP application 09/152,160 filed 9/11/1998, now US Patent 6,248,327 (herein `327). The priority document does not support the specific claim limitation of the instant invention. For example, the instant invention is drawn to a isolated antibody that binds to an epitope present within am ino acids 175-536 of SEQ ID No: 4, wherein the epitope is SEQ ID No: 1. Support for these claim limitations are not founding the `327 patent. Therefore, the filing date of the instant application (i.e. 01 March 2000) will be used for the determination of prior art.

Claim Rejections Maintained - 35 USC § 103

6. The rejection of claims 56-58,60,68-73,76-79,81-82, and 90-91 under 35 USC § 103(a) as being obvious over Honda *et al* (Blood 1994; 81(12):4186-4194, IDS C1-previously cited) in view of Tonks *et al* (WO 95/30008) is maintained for the reasons of record. Applicant argues that neither Honda *et al* nor Tonks *et al* specifically teach or suggest antibodies provided in dilients or excipients pharmaceutically acceptable in humans. Specifically, applicant argues that the examiner has taken Tonks *et al* out of context. Instead, applicant contends that Tonks *et al* teaches the effects of PTPs (i.e. growth inhibition, involvement in cytoskeletal integrity, transformation, tumor invasion, metastasis, cell adhesion, and leukocyte movement) as a class and fails to specifically teach ECRTP/DEP-1 as being involved in any of the effects of PTPs. Moreover, applicant contends that such an assertion by Tonks *et al* is no more than an "invitation to explore". Applicant's arguments have been carefully considered but are not deemed persuasive to overcome the rejection of record.

As indicated in the last office action dated 10/5/2004, Tonks *et al* clearly teaches antibodies to the DEP-1 protein (see page 8 for example) and further indicates that the antibodies are to be used for "modulating (i.e. inhibiting, blocking or stimulating) the *in vivo* binding and/or signal transduction activities of Type III density enhanced phosphatases." When the reference relied on expressly anticipates or makes obvious all of the elements of the claimed invention, the reference is presumed to be operable. Once such a reference is found, the burden is on applicant to provide facts rebutting the presumption of operability. *In re Sasse*, 629 F.2d 675, 207 USPQ 107 (CCPA 1980).

See also MPEP § 716.07. Therefore, the reference has enabled an antibody against DEP-1/ECRTP as claimed.

Applicant additionally contends that Tonks *et al* uses rodents to study the in vivo affects of modulators, while the instant invention is drawn to antibodies suitable for human use. From this, applicant concludes that Tonks *et al* and Honda *et al*, either alone or in combination fail to teach the claimed invention of an antibody and a diluent or excipients pharmaceutically acceptable in humans. Applicant's arguments have been carefully considered but are not deemed persuasive to overcome the rejection of record. Specifically, one of skill in the art would have found it *prima facie* obvious to use rodent models to extrapolate to human use. It is conventional in the art to use mouse models to study the effects of drugs and modulators prior to the use of said drugs or modulators in humans. For example, Kung HF *et al* (Zhongguo Yi Xue Ke Xue Yuan Xue Bao. 2001 Feb;23(1):2-7 -- evidentiary reference) indicate that the mouse is an ideal candidate for the study of human diseases "because [the] mouse is physiologically very similar to human." (see abstract only). Thus one of skill in the art would find it obvious to use the data obtained from Tonks *et al* to extrapolate into human effectiveness. Nonetheless, the studies performed by Tonks *et al* utilizes human DEP-1 (see for example 5, page 20). Therefore, the use of the experimental rodent model to study the effects of DEP-1 antibodies is clearly intended to be correlates to humans.

Applicant additionally argues that the examiner has used impermissible highsight reconstruction to substantiate the argument that excipients or diluents added to the antibody can be used for the modulation of disease in vivo. Applicant additionally

contends that Tonks *et al* fails to teach any affects of modulation of type III DEPs and that any suggestion or motivation for such affects is derived from the application of the instant invention. Applicant's arguments have been carefully considered but are not deemed persuasive to overcome the rejection of record. Specifically, Tonks *et al* teaches that binding molecules such as antibodies can be used for in vivo modulation (see page 8-9). This alone is sufficient to imply that an excipient or diluent, which is pharmaceutically acceptable, is present with the antibody. Therefore, whether Tonks *et al* actually performs in vivo experimentation (i.e. to show modulation or some activity) with the antibody is irrelevant, because the claims are drawn to products, all the limitations of the product are described.

It is also noted that newly amended claim 61 has overcome the rejection under 35 USC § 103(a).

This rejection is also newly applied to claims 63-67,83-88, and 92, for the reasons of record. Newly rejected claims 63-67,83-88, and 92 are drawn to fragments and humanized antibodies that binds to amino acids 175-536 of ECRTP/DEP-1.

Claim Rejections Maintained - 35 USC § 112 1st paragraph

7. The rejection of claims 74-75, 80, and 89 under 35 USC § 112, 1st paragraph as lacking an enabling disclosure is re-instated/maintained for the reasons of record. In the response filed 4/15/2004 applicant argues that deposit statements found in the specification (i.e. pages 42 and 46) support the requirements made under the Budapest Treaty. Specifically, applicant indicates that disclosure of the accession number, date of

deposit, description of the deposited material, and the name and address of the depository is sufficient to comply with the rules set forth under 37 CFR§1.809. Applicant's arguments have been carefully considered and upon further review and reconsideration, the arguments are not found persuasive. The rules governing the deposit of biological material can be found under MPEP 2408. In the instant case, the terms of the deposit have not been clearly set forth (i.e. length of availability, restriction of the deposit, etc. -- see 37CFR§1.806).

Therefore, the rejection under 35 USC 112, 1st paragraph is maintained/re-instated.

New Arguments

Claim Rejections - 35 USC § 102

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 63,67,83,84, and 92 are rejected under 35 U.S.C. 102(b) as being anticipated by Honda *et al* (Blood 1994 Dec.; 84(12):4186-4194 -- previously cited). Honda *et al* teach an isolated antibody that binds to the extracellular domain of ECRTP/DEP-1 (i.e. SEQ ID No: 4). Honda *et al* also teach that the antibody is derived from rabbit serum and therefore qualifies as a pharmaceutically acceptable carrier (see page 4187, left col.). "Comprising" is considered open-ended claim language and includes amino acid residues outside of the specified polypeptide of SEQ ID No: 1. Therefore, an isolated antibody that binds to the extracellular domain of SEQ ID No: 4

wherein "the epitope comprising the sequence of QSRDTEVL SEQ ID No: 1" includes an unlimited number of amino acid sequences, which ultimately reads on all of SEQ ID No: 4. Moreover, although the reference does not specifically teach that the isolated antibody has angiogeneic modulating activity, the claims are drawn to the product *per se* and inherently, such an antibody would modulate angiogenesis. Thus, the claimed antibody appears to be the same as the prior art. The office does not have the facilities and resources to provide the factual evidence needed in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is on the applicant to prove that the claimed product is different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989).

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

11. Claims 56,58-59,63,65,67-69,71,73-77,79-80,82-84,86 and 88-92 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi *et al* (J. Am. Soc. Nephrol 1999;10:2135-2145 -- IDS 9/22/2003 #5). Takahashi *et al* teach a monoclonal

ECRTP.Ab1 antibody that is directed to the ectodomain of ECRTP/DEP-1 (see page 2136, left col.). Specifically, the ECRTP.Ab1 antibody is raised against amino acids 175-536 of ECRTP/DEP-1, and is formulated in a diluent acceptable in humans (i.e. TBS, see page 2136, right col.). "Comprising" is considered open-ended claim language and includes amino acid residues outside of the specified polypeptide of SEQ ID No: 1. Therefore, an isolated antibody that binds to the extracellular domain of SEQ ID No: 4 wherein "the epitope comprising the sequence of QSRDTEVL SEQ ID No: 1" includes an unlimited number of amino acid sequences, which ultimately reads on all of SEQ ID No: 4. Moreover, although the reference does not specifically teach that the isolated antibody has angiogeneic modulating activity, the claims are drawn to the product *per se* and inherently, such an antibody would modulate angiogenesis. Thus, the claimed antibody appears to be the same as the prior art. The office does not have the facilities and resources to provide the factual evidence needed in order to establish that the product of the prior art does not possess the same material, structural and functional characteristics of the claimed product. In the absence of evidence to the contrary, the burden is on the applicant to prove that the claimed product is different from those taught by the prior art and to establish patentable differences. See In re Best 562F.2d 1252, 195 USPQ 430 (CCPA 1977) and Ex parte Gray 10 USPQ 2d 1922 (PTO Bd. Pat. App. & Int. 1989). Moreover, because it appears that the ECRTP.Ab1 antibody disclosed in Takahashi *et al* is identical to instantly claimed ATCC HB12570 antibody and also because the specification (see page 42, for example) of the instant

application indicates that it is in fact identical, the limitations of the antibody that binds to or "is" ATCC HB12570 are met.

Claim Rejections - 35 USC § 103

12. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

13. Claims 56-60 and 63-92 rejected under 35 U.S.C. 103(a) as being obvious over Takahashi *et al* (previously cited) in view of Tonks *et al* (WO 95/30008).

The applied reference has common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

a. The teachings of Takahashi *et al* are set forth above as they apply to claims 56,58-59,63,65,67-69,71,73-77,79-80,82-84,86 and 88-92 above.

b. Takahashi *et al* however, do not specifically disclose antibody fragments that bind to an epitope present within amino acids 175-536 of the ECRTP/DEP-1, nor do they specifically teach human or humanized antibodies.

c. These deficiencies are made up by Tonks *et al*. Tonks *et al* teach antibodies against the DEP-1 antigen and specifically disclose fragments such as ScFv and chimeric antibodies (i.e. humanized) (see pages 8-9, in particular).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to construct fragments of the ECRTP.Ab1, such as ScFv or humanized antibodies given the disclosures of both Takahashi *et al* in view of Tonks *et al*. One of skill in the art would be motivated to do so because Takahashi *et al* taught that the ECRTP.Ab1 antibody was effective at recognizing the ECRTP/DEP-1 antigen and Tonks *et al* taught that antibody fragments directed against ECRTP/DEP-1 could be made and was in fact effective at modulating in vivo. One of skill in the art would expect a reasonable amount of success in making ScFv or humanized versions of the ECRTP.Ab1 because Tonks *et al* taught that antibodies against the ECRTP/DEP-1 antigen have a useful function in vivo.

All other rejections are withdrawn in view of the applicant's amendments and arguments thereto as set forth in a paper filed 2/7/05.

Conclusion

No claim is allowed. Claim 60 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher H. Yaen whose telephone number is 571-272-0838. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on 571-272-0787. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher Yaen
Art Unit 1642
May 9, 2005